

```

from OpenGL.GL import *
from OpenGL.GLUT import *
from OpenGL.GLU import *

import sys
import math

window = 0

width, height = 600, 600

def draw_pentagon_with_triangles():
    glBegin(GL_TRIANGLES)
    colors = [(1, 0, 0), (0, 1, 0), (0, 0, 1), (1, 1, 0), (1, 0, 1)]
    cx, cy = 0, 0
    r = 0.5
    for i in range(5):
        glColor3f(*colors[i % len(colors)])
        angle1 = 2 * math.pi * i / 5
        angle2 = 2 * math.pi * ((i + 1) % 5) / 5
        x1, y1 = r * math.cos(angle1), r * math.sin(angle1)
        x2, y2 = r * math.cos(angle2), r * math.sin(angle2)
        glVertex2f(cx, cy)
        glVertex2f(x1, y1)
        glVertex2f(x2, y2)
    glEnd()

def draw_pentagon_with_lines():
    glColor3f(1, 1, 0) # Yellow

```

```
glBegin(GL_LINES)
r = 0.5
for i in range(5):
    angle1 = 2 * math.pi * i / 5
    angle2 = 2 * math.pi * ((i + 1) % 5) / 5
    glVertex2f(r * math.cos(angle1), r * math.sin(angle1))
    glVertex2f(r * math.cos(angle2), r * math.sin(angle2))
glEnd()
```

```
def draw_house():
    glColor3f(1, 0, 1)

    # Draw base (square)
    glBegin(GL_LINE_LOOP)
    glVertex2f(-0.6, -0.8)
    glVertex2f(0.6, -0.8)
    glVertex2f(0.6, 0.0)
    glVertex2f(-0.6, 0.0)
    glEnd()
```

```
    # Roof (triangle)
    glBegin(GL_LINE_LOOP)
    glVertex2f(-0.6, 0.0)
    glVertex2f(0.6, 0.0)
    glVertex2f(0.0, 0.6)
    glEnd()
```

Windows

glBegin(GL_LINE_LOOP)

glVertex2f(-0.5, -0.3)

glVertex2f(-0.2, -0.3)

glVertex2f(-0.2, -0.05)

glVertex2f(-0.5, -0.05)

glEnd()

glBegin(GL_LINE_LOOP)

glVertex2f(0.2, -0.3)

glVertex2f(0.5, -0.3)

glVertex2f(0.5, -0.05)

glVertex2f(0.2, -0.05)

glEnd()

Door

glBegin(GL_LINE_LOOP)

glVertex2f(-0.15, -0.8)

glVertex2f(0.15, -0.5)

glVertex2f(0.15, 0.0)

glVertex2f(-0.15, 0.0)

glEnd()

Door knob (point)

glPointSize(5)

glBegin(GL_POINTS)

glVertex2f(0.1, -0.25)

glEnd()

def draw():

glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT)

glLoadIdentity()

glPushMatrix()

glTranslatef(-0.75, 0.5, 0)

draw_pentagon_with_triangles()

glPopMatrix()

glPushMatrix()

glTranslatef(0.75, 0.5, 0)

draw_pentagon_with_lines()

glPopMatrix()

glPushMatrix()

glTranslatef(0, -0.6, 0)

draw_house()

glPopMatrix()

glutSwapBuffers()

def main():

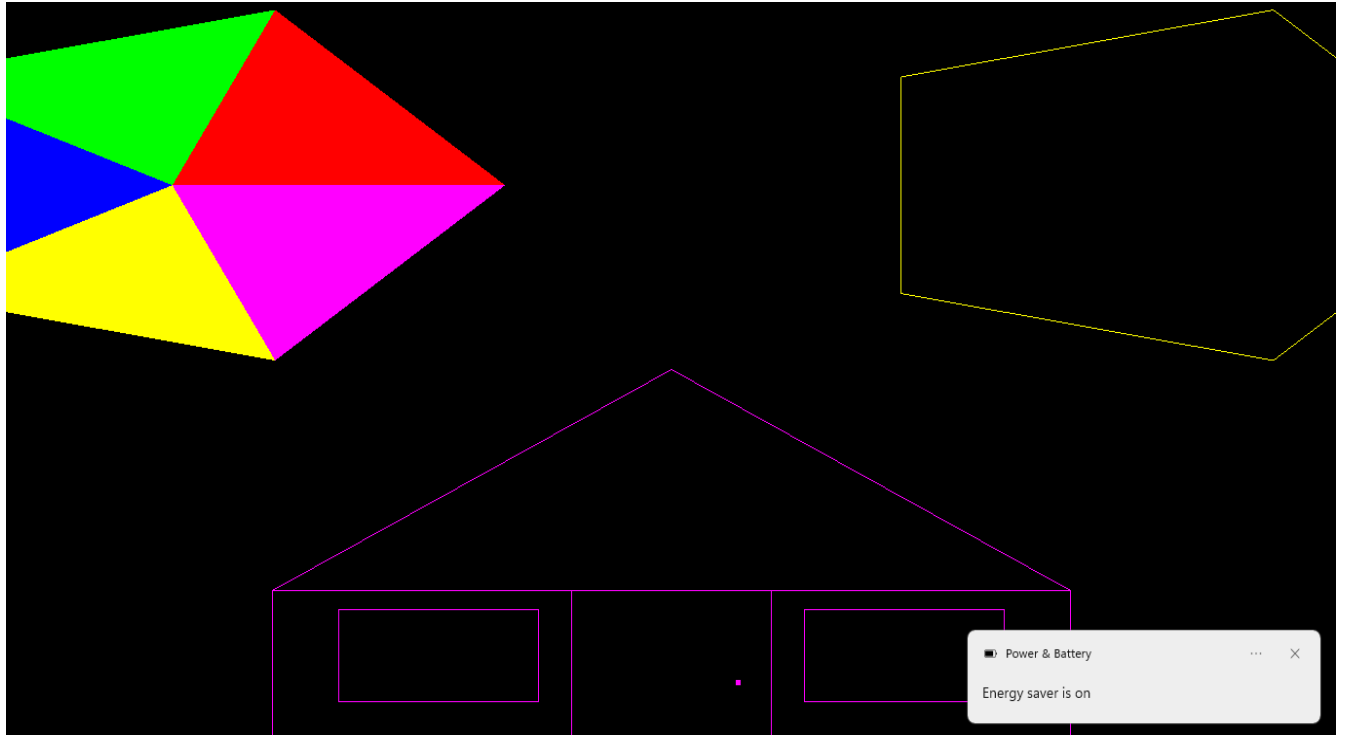
global window

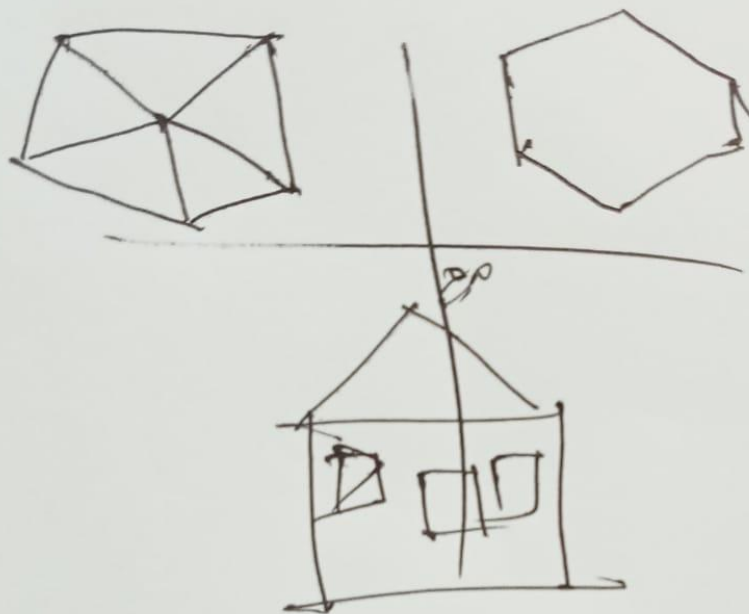
glutInit(sys.argv)

glutInitDisplayMode(GLUT_RGBA | GLUT_DOUBLE | GLUT_ALPHA | GLUT_DEPTH)

```
glutInitWindowSize(width, height)  
glutInitWindowPosition(0, 0)  
window = glutCreateWindow(b"OpenGL House and Pentagon")  
glutDisplayFunc(draw)  
glutIdleFunc(draw)  
glutMainLoop()
```

```
if __name__ == "__main__":  
    main()
```





Fixal